

## REMARKS

Upon entry of the present Amendment, claims 1, 14-32, 34, 35, 37, 38, 40-44 and 46-49 will be pending. Claims 2-13, 33, 36, 39 and 45 are canceled. Applicant reserves the rights to pursue the canceled subject matter in a subsequent application. Support for amended claims 1 and 49 for reciting “nucleic acid encodes the amino acid residues 1-96 set forth in SEQ ID NO:5” or “the amino acid residues 1-96 set forth in SEQ ID NO:5” can be found throughout the application and, *inter alia*, in the original claims 1 and/or 11. Claims 21, 24, 30 and 32 are amended to conform with the amendment of claim 1 and/or for other formality reasons. The above-described amendments do not introduce any new matter into the present application.

### Rejections under 35 U.S.C. § 112

#### Indefiniteness

Claims 1-49 are rejected under 35 U.S.C. 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Examiner states that applicant recites in claim 1, as well as claim 49 that the chimeric protein is “stable.” The Examiner alleges that applicant has failed to define the stability of the protein required by the claim. The Examiner also alleges that there is no indication as to how long or under what conditions the chimeric protein is “stable.”

The Examiner states that in claims 1 and 49, applicant recites the limitation “100-fold sweet as compared to the identical amount of sucrose.” The Examiner alleges that this statement is inherently vague and indefinite. The Examiner also alleges that organoleptic qualities such as sweetness require a qualitative determination based on one’s senses. The Examiner further alleges that since sweetness is a qualitative determination, it is necessarily vague in nature.

Applicant respectfully submits that this rejection is overcome by the amendments of claims 1 and 49 because neither “stable” nor “100-fold sweet as compared to the identical amount of sucrose” is recited in claims 1 and 49 any more.

Claims 4, 10, 11, 30, 32 and 33 refer to figures. The Examiner states that generally, it is appropriate to refer to a figure in a claim only when there is no other adequate way of claiming the invention.

This rejection is overcome by the cancellation of claims 4, 10, 11 and 33 and the amendment of claim 32, which recites a SEQ ID No. instead of a figure.

#### Written description

Claims 1-49 are rejected under 35 U.S.C. 112, first paragraph, as allegedly failing to comply with the written description requirement. The Examiner alleges that the claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

According to the Examiner, the present claims are drawn to sequences having 40 percent, 60 percent and 90 percent identity to the amino acid sequences of either the A or B chains of monellin. Moreover, the nucleic acids encoding this wide array of variants also comprise undefined codons which “are preferably used by yeast cells.” The instant claims are drawn to sequences with undefined modifications, which have certain activities or functions. According to applicant’s claims, these sequences comprise a protein that is at least one hundred fold as sweet as sucrose. These are genus claims that encompass a wide array of molecules. The specification does not disclose the wide array of variants or modifications that these claims embrace. The specification also fails to provide any teachings as to how the structures of these sequences relate to their function. Thus, the specification neither describes the complete structure of a representative number of species nor does it describe a representative number of species in terms of partial structure and relevant identifying characteristics. Absent of such

teachings and guidance as to the structure-function relationship of these molecules, the specification does not describe the claimed recombinant DNA molecules in such full, clear, concise and exact terms so as to indicate that applicant had possession of these molecules at the time of filing of the present application. Thus, the written description requirement has not been satisfied.

Applicant respectfully submits that this rejection is overcome by the amendments of claims 1 and 49 because “codons which are preferably used by yeast cells” is no longer recited in claims 1 and 49.

#### Enablement

Claim 33 is rejected under 35 U.S.C. 112, first paragraph, as allegedly failing to comply with the enablement requirement. The Examiner alleges that the claim contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

According to the Examiner, applicant claims a vector construct, pGWYS 1, in the instant claims. In order to sufficiently enable the claimed vector, applicant must make a biological deposit.

Applicant respectfully submits that this rejection is rendered moot by the cancellation of claim 33.

It is respectfully submitted that the rejections of claims 1-49 under 35 U.S.C. § 112 are overcome by the above remarks and/or amendments and must be withdrawn.

#### **Rejections under 35 U.S.C. § 101**

Claims 27-30 are rejected under 35 U.S.C. 101 because the claimed invention is allegedly directed to non-statutory subject matter. The Examiner states that the present claims are drawn to DNA. The Examiner also states that the language “DNA” alone ordinarily connotes a product of nature, nucleic acid sequences include exons, introns, regulatory regions etc., which are

ordinarily not patentable. The Examiner suggests that the language "isolated DNA," "nucleic acid" or similar such language is preferred.

Applicant respectfully submits that this rejection is overcome by the amendments of claim 24, which recites "isolated nucleic acid" in its presently amended form. It is respectfully submitted that the rejection of claims 27-30 under 35 U.S.C. § 101 is overcome by the above remarks and/or amendments and must be withdrawn.

#### **Rejections under 35 U.S.C. §§ 102 and 103**

Claims 1-4, 8, 9, 12, 13, 24, 25, 26, 27, 32 and 43-49 are rejected under 35 U.S.C. 102(b) as being allegedly anticipated by Kim et al. (US. Patent No. 5,478,923).

Claims 14-23, 27, 31 and 34-39 are rejected under 35 U.S.C. 103(a) as being allegedly unpatentable over Kim et al. (U.S. Patent No. 5,627,372) in view of Brierley et al. (U.S. Patent No. 5,324,639) and Sledziewski et al. (US Patent No. 6,300,099).

According to the Examiner, claims 5-7, 10, 11, 28-30, 33 and 40-42 are free of art. Applicant respectfully submits that the art-based rejections are overcome by the amendments of claims 1 and 49, which incorporate the limitation of original claim 11. It is respectfully submitted that the rejections of claims 1-4, 8, 9, 12-27, 31, 32, 34-39 and 43-49 under 35 U.S.C. §§ 102 and 103 are overcome by the above remarks and/or amendments and must be withdrawn.

## CONCLUSION

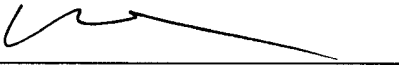
Applicant respectfully submits that the rejections under 35 U.S.C. §§ 101, 102, 103 and 112 have been overcome by the above remarks and/or amendments. Early allowance of the pending claims 1, 14-32, 34, 35, 37, 38, 40-44 and 46-49 are earnestly requested.

In the unlikely event that the transmittal letter is separated from this document and the Patent Office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time and authorizes the Assistant Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. 03-1952 referencing docket no. 464332000200. However, the Assistant Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

Respectfully submitted,

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